Homework Week 04 – Computer Vision System and Game Strategy

Due Week 05

1. Week 04 introduced the computer vision system to be used in the Lego-based Robot Soccer Competition. Build 2 robots. Write algorithms that moves Robot 1 to the ball location and then pushes the ball to the location of Robot 2. Capture and post on your web site, a 10-second WMV video of this demonstration. Demonstrate this in the Week 05 class too.

2. Construct and demonstrate your robot’s mechanisms. The mechanisms serve to pass, receive, pass and/or block the Lego ball. Capture and post on your web site, a 10-second WMV video of this demonstration. Demonstrate this in the Week 05 class too. For each mechanism, write a paragraph describing: (1) sources that inspired your design (e.g. from the 10 papers you analyzed in prior weeks; (2) a brief description of how your mechanism works; and (3) your opinion on the design i.e. advantages and disadvantages of the mechanisms.

3. Create a 10-min PowerPoint slide presentation (approximately 10 slides). Your team will present this privately to the instructor during next week’s session. The presentation should include:
   A. Technical Design Requirements and Trade Studies on your game strategy e.g. offensive and/or defensive plays
   B. Your team’s concept. Provide playbook strategies e.g. sketch the playfield, robot locations (your team and opponent’s team) and how you plan to win (e.g. score points, block, steal, etc